

INSTITUTIONAL PROPERTY RIGHTS OF RESIDENTIAL PUBLIC OPEN
SPACE IN SABAH, MALAYSIA

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I dedicate this work to my Heavenly Father, my dearest parents, my fiancée, two little sisters, and relatives as well. Without their steadfast support, prayers, guidance, patience, understanding, and continuous love, this work can never be produced.

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ABSTRACT

There is still a lack of research on social-ecological system, especially implications of property-rights structure and transaction costs on neighbourhood commons. This is true for residential public open space (POS) governance, particularly regarding its ownership regime, consumption and management rights. Thus, a new institutional economic paradigm is employed in this research to address the four objectives as follows; (i) to study the relationships of diverse property-rights structure attributes with quality of residential POS; (ii) to examine the POS commons dilemmas that resulted by the local diverse property-rights structure issues; (iii) to develop a common-property self-organising system in order to address the issues of local property-rights structure and dilemmas of POS; and (iv) to formulate and validate a social-ecological system model. A mixed-method design, mainly a phenomenological case study approach, was adopted. Based on the two districts of Kota Kinabalu and Penampang, Sabah, various main sampling methods, data collection and data analysis techniques were performed on the respective units of analysis. These mainly involved issues of Sabah's POS property-rights, social dilemmas of POS quality, 172 POS sites, 12 public officials, 8 private suppliers, 200 residents and 5 experts. Results showed that three property-rights attributes: title deed existence, community involvement and POS site handing-over period to local government have statistically significant associations with POS quality, at $X^2_{(1, N=172)} = 22.984, p = 0.000$; $X^2_{(1, N=150)} = 7.938, p = 0.005$; and $X^2_{(2, N=150)} = 30.047, p = 0.000$, respectively. The present local property-rights structure is adversarial as opportunistic stakeholders' behaviour and commons dilemmas were externalised. Lastly, the self-governing with polycentric system and a conceptual theory-based social-ecological system model are necessary and valid to address the status quo of property-rights and POS dilemmas. The model also renders a better understanding of social-ecological system interrelationships. Aside from leading to policy assessment and design that must be transdisciplinary in structure which aims at curbing POS quality issues, the model provides policy and management insights, by encouraging public officials to consider reengineering the POS ownership, consumption, management and maintenance system, via the adaptive property-rights re-allocation.

ABSTRAK

Masih terdapat kekurangan penyelidikan bagi sistem sosial-ekologikal, terutamanya implikasi struktur hak kepemilikan dan kos transaksi bagi kawasan kejiranan bersama. Ini adalah benar untuk urusan pentadbiran kawasan lapang awam (POS) perumahan, terutamanya mengenai hak-hak rejim pemilikan, penggunaan dan pengurusan. Oleh itu, paradigma institusi ekonomi baru telah diaplikasikan dalam kajian ini untuk mencapai empat objektif seperti berikut; (i) untuk mengkaji hubungan antara kepelbagaian atribut struktur hak kepemilikan dengan kualiti POS perumahan; (ii) untuk menilai dilema POS yang wujud daripada isu-isu kepelbagaian struktur hak kepemilikan tempatan; (iii) untuk membangunkan sistem organisasi sendiri kepemilikan bersama untuk menangani isu-isu hak kepemilikan dan dilema POS; dan (iv) untuk merumus dan mengesahkan model sistem sosio-ekologikal. Kajian kaedah campuran terutamanya pendekatan fenomenologi dan kajian kes telah diterima pakai. Berdasarkan dua daerah Kota Kinabalu dan Penampang, Sabah, pelbagai kaedah utama persampelan, pengumpulan data dan teknik analisis data telah dijalankan pada unit analisis masing-masing. Ini terutamanya melibatkan isu hak kepemilikan POS Sabah, dilema sosial bagi kualiti POS, 172 buah tapak POS, 12 orang pegawai awam, 8 pembekal swasta, 200 penduduk dan 5 pakar. Hasil kajian menunjukkan bahawa hanya tiga atribut hak kepemilikan iaitu kewujudan surat hakmilik POS, penglibatan komuniti dan tempoh serah tapak POS kepada kerajaan tempatan yang masing-masing mempunyai hubungkait signifikan dengan kualiti POS pada $X^2_{(1, N=172)} = 22.984, p = 0.000$; $X^2_{(1, N=150)} = 7.938, p = 0.005$; and $X^2_{(2, N=150)} = 30.047, p = 0.000$. Hak kepemilikan tempatan yang sedia ada adalah tidak sesuai kerana tingkah laku oportunistik pihak berkepentingan dan dilema bersama telah terwujud. Akhirnya, sistem pentadbiran sendiri yang berpolisentrik dan model sistem sosio-ekologikal berasaskan konsep teori adalah diperlukan dan sah sebagai langkah dalam menangani status quo bagi hak kepemilikan dan dilema POS. Model ini juga memberi pemahaman tentang hubungkait sistem sosial-ekologikal yang lebih jelas. Selain daripada yang membawa kepada penilaian dasar dan reka bentuk yang perlu dalam struktur transdisiplinari yang bertujuan untuk membendung isu kualiti POS, model ini menyediakan pandangan dasar dan pengurusan dengan menggalakkan pegawai-pegawai awam untuk mempertimbangkan kejuruteraan semula sistem pemilikan, penggunaan, pengurusan dan penyelenggaraan POS melalui peruntukan semula hak kepemilikan yang adaptif.

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LIST OF ABBREVIATIONS

CL	-	Country Lease
CPR	-	Common Pool Resources
DSR	-	Design Science Research
EFA	-	Exploratory Factor Analysis
FC	-	Federal Constitution
FGD	-	Focus Group Discussion
HOA	-	Home Ownership Association
IAD	-	Institutional Analysis and Development
KK	-	Kota Kinabalu
KKCH	-	Kota Kinabalu City Hall
KMO	-	Kaiser-Meyer-Olkin
KR-20	-	Kuder–Richardson 20
LGO	-	Local Government Ordinance
LSD	-	Lands and Surveys Department
MM	-	Mixed-Method
MOT	-	Memorandum of Transfer
NIE	-	New Institutional Economics
NT	-	Native Title
PDC	-	Penampang District Council

POS	-	Public Open Space
PRE	-	Proportional Reduction of Error
QUAL	-	Qualitative
QUAN	-	Quantitative
RH	-	Research Hypothesis
RO	-	Research Objective
RQ	-	Research Question
SES	-	Social-Ecological System
SLO	-	Sabah Land Ordinance
SPSS	-	Statistical Package for the Social Sciences
TCPO	-	Town and Country Planning Ordinance
TL	-	Town Lease
VRSMO	-	Voluntary Retail Street Management Ordinance

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter focuses on the topic of institutional property-rights structure and its effects on neighbourhood residential commons: public open space (POS) order regarding the utilisation and management fashion as well as its quality in the local context, Sabah Malaysia. The ultimate purpose is to render a clear overall direction (focus) and understanding to both researcher and readers by taking several important elements into accounts, such as ontological and epistemological perspectives (see Phillips and Pugh, 2005): background of the topic, latest issues of the topic and questions, boundary or ambit of this study, intention of researcher, importance of this study, and the process and procedures involvement for this and subsequent chapters.

This means it includes (i) research background: current development on the POS and institutional property-rights issues and (ii) specific statement of problems and research gap (deficiency) of the topic. From that, it reveals the (iii) emergence of research questions (RQ), (iv) formulation of one hypothesis, and (v) specific aim and 4 objectives to address each emergent RQ and to test the hypothese as well. Also, this covers (vi) research scope: coverage and context of the study, (vii) several significances of this topic and (viii) an overview of a conduct of a research (research framework), which it is juxtaposed with the illustration of whole thesis organisation/ structure. Finally, (x) a summary is provided to close the chapter.

1.2 Research background

Generally, idiosyncratic common resource- public open space (POS), as urban or new commons, can be defined in wide arrays of definitions, characteristics and usages, e.g., parking space, park, playground, community garden, semi-active space: basketball court, promenade (Tang and Wong, 2008). In recent years, research on equitable and sustainable management of common pool resources (CPR) or commons-based POS has grown tremendously (Mcshane, 2010; Parker and Johansson, 2011) because it has evidently portrayed significant roles in achieving sustainability as well as the quality of life (see Chiesura, 2004; Nasution and Zaharah, 2012; Ling *et al.*, 2014a). However, due to arising argumentations on the issues of neglect, abandonment and revival of the public open space which have been prolonged since the last quarter of the 20th century (see Townshend and Madanipour, 2008); henceforth, protection of POS was called forth and it has been considered as one of the most debatable and concerned issues in the current world.

Nevertheless, on the POS protection matter, it leads us to ponder what actually should be protected? In fact, both quality and quantity aspects of the POS should be accentuated as these are two undividable components that tend to degrade (see Nasution and Zaharah, 2012), especially the poor quality may also entail deterioration or lessen the quantity provided for public. For instance, POS mismanagement (quality sense) may cause irretrievably lost open space (quantity sense) (Maruani and Amit-Cohen, 2007). Thus, the responsibility of POS protection should not strictly be shouldered by the governments alone; instead, it can be shared out to Non-Governmental Organisation agencies or private suppliers, such as developer and local community. Still, mostly, for this common resources, it is still governed by the local government (centralisation) who has the greatest impact on it. Or, at times, it is held by private entrepreneur due to current institutions and public policies necessity.

Despite that, there are plethora of studies transitioned to the protection of government-owned POS quality aspect, e.g., via several mechanisms: perception and socioeconomic features: attitudes (preferences) of stakeholders towards POS

protection (Broussard *et al.*, 2008; Maruani and Amit-Cohen; 2011), spatial (geographical location, size, density, shape) POS design planning model (Maruani and Amit-Cohen, 2007), and ‘*conventional*’ state planning policies by edict (plan quality and implementation, restrictive land-use zoning and development approaches, e.g., development plan) (Koomen *et al.*, 2008) (see Pigouvian stance), POS architectural design (Colding *et al.*, 2013). However, in reality, there are perennial unresolved government-owned POS quality issues. They are probably induced by several key contributors, such as public participation (Nelson and Duncan, 1995), planning policy (Steelman and Hess, 2009), critical implementation and enforcement (Bengston *et al.*, 2004), which illegal privatisation and commercialisation of public space are still burgeoning, and negative externalities and market failures (spillover) are accordingly unfolded. Aside from that, how can this status quo be explained?

From the commons perspective, for a long time commons theorists have held that human action is detrimental to commonly owned resources (Pretty, 2003). The thinking has been that individuals will behave self-interestedly or opportunistically by attempting to free ride by both overusing and under-investing in the common resource in the community. Whereas this action (free-riding) may be apparently rational, it is rather ironical that the same individuals who use the common resource in such a manner do not have the vision to reflect upon the consequences of their actions for the future generations. This grave situation has led to environmental damage caused by a destruction of natural resources (e.g., POS) and the consequences have been drastic climatic changes that have threatened livelihoods of a great constituency of humanity. The gravity of this phenomenon has been captured in Hardin's (1968) classical tale "*Tragedy of the Commons*", in which he strongly argues against what he terms a "*pasture free for all*". Hardin proposes tough measures to guard against what he terms "*free-riding*". The ultimate outcome of Hardin's classical tale has been the proposal that for common resources to be protected, there is a need to either exercise strong central government control over them or a complete privatisation. Albeit the context of the tragedy in Hardin's metaphorical tale is a traditional natural resource setting in a rural area, but it's analogy cannot be ruled out for the several resources, which are commonly owned and or used by an urban or neighbourhood communities, especially, in POS context (Foster, 2011; Borch and Kornberger, 2015; Foster and Laione, 2016).

Due to this potential gap which emphasises on the fundamental social-environmental interaction, i.e., significance of human interaction on POS governance: management and consumption; hence, an multi-disciplinary approach¹ (commons analysis), mainly involving landscape and urban planning, microeconomics, political and social behavioural domains, should inevitably be served as a lynchpin (Brandt *et al.*, 2013; Schroeder, 2014). More precisely, an institutional property system should be the focus in relation to the POS (commons) condition, since it shapes the POS management and utilisation patterns of human, which in turn defines its' wellbeing, quality, efficiency, equity and sustainability.

Nevertheless, currently, such institutional domain is often overlooked or still considered little (scanty) in new commons (i.e., POS) application. The reason being that much attention of such institution was and is still focused on the traditional or rural commons (natural resources): agricultural, fisheries, irrigations, forestry, etc. (see Hess, 2008). Consequently, studies on the institutional-property-rights-triggered self-governing collective action (common property regime) in either urban or neighbourhood residential commons POS, as an alternative, is yet at infinitesimal level too, despite the fact that there are emerging evidence of successful collective action in such commons governance (Foster, 2011). In summary, to understand the entire interrelationship between the institutional property-rights structure, POS quality issues and POS alternative constitution for melioration, this study, therefore, is to investigate how neighbourhood residential commons' quality issues are affected by the institutional property rights structure, especially via the diverseness of institutional-based social-ecological system interaction. In addition, the roles of the adaptive property system in ameliorating the POS governance: management and utilisation predicaments is also focused.

¹ Especially on the commons study, according to Pinkerton's (1989) idea, an interdisciplinary perspective is urgently required, i.e., "...we can no longer afford to tackle these intractable problems in isolation from one another. All efforts are needed. All examples add something to our understanding...better communication across disciplines and between theoreticians and practitioners."

1.3 Statement of problem and research gap

Based on the brief description of research background above, the problems of this study was partially unwrapped; hence, this section provides a fleshed out version of problems discussion pertaining to POS issues. Nevertheless, few established oeuvres (see Hernon and Schwartz, 2007; Creswell, 2012) on the problem statement formulation guidelines were applied, particularly concerning what interlocking components should be contained in this section. As a local public or civic goods supplier either local government or private developer, provisioning and sustaining a quality green public open space is significant and imperative because such amenities render many benefits: better wellbeing, quality of life, livability, and sustainability to society (Chiesura, 2004). Such POS not only increases property values (Nicholls, and Crompton, 2005), it also provides public health benefits (Tzoulas *et al.*, 2007) and ecological services. As World Bank (2015) put it “*Public Spaces- not a “nice to have” but a basic need for cities*”. Thus, there is growing concern or attention on how to design a better quality and more importantly, to preserve the quality at its best, despite the fact that the latter is neglected and is always being a challenge, to date.

The manoeuvre of designing and maintaining good condition/ quality of POS is always challenging and of necessity crucial as it is to assure the sustainability and quality of life will not be menaced. Nevertheless, although various preserving means, mechanisms and strategies of POS, through different perspectives (e.g., especially architectural and spatial and conventional planning design²), have been engaged, yet, the problems of POS that cause poor quality issues (degradation), as negative externalities, are still resulting, presently, especially in developing countries³, e.g., Malaysia, Sri Lanka, South Africa, India and so on (see World Bank, 2015).

² Although Tieboutian local public goods (spatial ‘municipal clubs’) theory (Tiebout, 1956) was incorporated as a planning model in some countries (especially local phenomenon, Malaysia), i.e., local governments can supply local public goods efficiently if there is sufficient choice between jurisdictions or through natural deterrence of distance, still the problems of POS are arising, to date, as his hypothesis is more towards ‘congestion/ overcrowded issue’ which may not extensively deal with other quality of POS issues (see more in Chapter 3 of property-rights regime: state property regime).

³ Despite the POS importance, they are still often poorly integrated or neglected in planning and urban development policy for action which its effects are particularly critical to wellbeing of the poor as they do not have spacious homes and gardens to retreat to compared to the rich who has the ability to engage better and more luxurious services via payment (membership fees) (World Bank, 2015).

The problems of POS are various but not limited to: overcrowded issue, vandalism, poor landscaping, graffiti, dirtiness, squatters' settlement encroachment, mismanagement and underinvestment, abandoned and neglected space, less monitoring issues, illegal conversion of space, strangers' loitering issue (see more in Webster and Lai, 2003; Webster, 2007; Colding and Barthel, 2013; Ling *et al.*, 2014a, b, c; Ellickson, 1996; Carmona *et al.*, 2008; Marzukhi and Abdul Karim, 2012; Foster, 2011; Foster and Laione, 2016; Kassa, 2008; Garnett, 2012; see Matisoff and Noonan, 2012 on dogs park issue; see also Nemeth, 2009; Kayden, 2000; Townshend and Madanipour, 2008; Van Melik *et al.*, 2009; Ling *et al.*, 2016 on the POS quality issues that have been undermanaged by local government that are due to their incapacibilities, e.g., limited financial and manpower resources, and low priority to maintenance, which demand an institutional change (Carmona *et al.*, 2008).

Many green areas in Malaysia are negatively affected by a population that increases in the cities (Gairola and Noresah, 2010). Such severe degradation of urban green spaces could adversely affect ecosystem services as well as the quality of human life (Aziz, 2012). All these issues then lead to negative externalities. This includes suboptimal and deteriorated quality and condition of POS in terms of landscaping, aesthetics, condition and functionality, accessibility, cleanliness, safety and security and comfort. For instance, often neglected or unmaintained POS, which resulted in poor landscape (bushy and long grass) or “*jungle POS*” can unnecessarily invite mosquitoes and snakes and has become the breeding ground for those pests. This consequently hampers the multifaceted quality of life, livability and sustainability of society, the interwoven wellbeing of environmental milieu, social and cultural, and economic that consist of physical, psychological, and community health aspects (see Byrne and Sipe, 2010). From the social perspective, wretched POS causes unhealthy or passive lifestyle because people are deprived of recreational activities, which manifold life-threatening illnesses like obesity, heart-attack, distress, and social disintegration, and crimes are unfolded. In addition, adversities of ecosystem and economy like exposure to ecological harms, i.e., pollutions, ambient temperature escalates, and medical costs increase, degraded neighbouring property values, and low employment are resulted correspondingly (see Francis *et al.*, 2012).

These POS issues are not merely occurring in global scale (in other countries or general Malaysia context). Those similar issues and negative externalities have been existing in local empirical study (State of Sabah) (see Ling *et al.*, 2014b,c). These are some instances that have provenly been supported by a legal case and some reported local newspapers. In the local case of *Sabindo Nusantara Sdn Bhd & Anor v Majlis Perbandaran Tawau & Ors [2011] 8 MLJ 653*, the open space's ownership is retained by the local government but somehow its genuine purpose of recreational activities has been defeated by the shopping mall (profit-making), instead. SAPP (2012) reported that it is the responsibility of the government to provide and create more open space for the public, instead of converting (misuse) public (state) land into commercial development for a profiteering purpose. DAP MEDIA (2010) has reported that mismanaged and poor drainage system of open spaces and playground within the area of Penampang has caused much worry to the residents, where this matter leads to flooding at open space and consequently, it is susceptible to breeding ground for aedes mosquitoes. Thus, it poses a health menace to the neighbourhood. The community is already in fear of the present pandemic of H1N1.

A dozen complaints had been lodged; alas, the issues cannot be addressed still, as the local council faced insufficient resource allocation. According to Luke Rintod (2012), in Sabah, an open recreational area meant for residents in a low-cost housing project has “magically” turned into a settlement overnight for about 1,000 illegal Filipinos immigrants. According to Hiew (2013), Taman Fu Yen (POS) and other parks in Luyang area are left unmaintained. This includes broken fences, overgrown grass, fallen trees, broken playground equipments, water-logged ground, which invite untoward situation, such as rats, snake, mosquitoes that will hostilely affect the nearby community (see also Jiun, 2001; Ahmad *et al.*, 2013). In short, clearly, the rampantly posed problems of such domestic Tieboutian modelled POS are closely related to governance, consumption and management issues that associated with relevant stakeholders (private suppliers, users, and local governments), rather than the *ab initio* design-based issues.

This entails that the current POS governance/ ruling system is problematic, in which an efficient and effective enforcement of management and consumption on space cannot be rendered. In fact, the central questions are: what happen after the designing stage of POS? Is there any enforcement or means to sustain the adequate, short-term and initially designed good quality of space? Certainly, the design stage is important as a part of a good quality of POS, but what makes it sustained? Is the current enforcement and implementation, particularly on the consumption and management behaviour efficient and sustainable? This issue is more important and imperative as this involves a long-term and complex process, especially it deals with interaction of social-ecological realm; hence, positioning oneself in transdisciplinary approach is necessary (see Brandt *et al.*, 2013).

As mentioned, the POS quality predicaments mostly emerged from the governance and institutional issues, which are closely related to interactional social-ecological management and utilisation behaviour. This simply connotes that researches pertaining to such contractual human-nature interaction dilemmas to be specifically analysed within the lens of institutional analysis and development (IAD) based social-ecological systems (SES) framework has been considerably overlooked and little, especially its application in planning theory (see Elmqvist, 2014; Lai, 2014) and in new or urban commons (see Nagendra and Ostrom, 2014). And similarly, this has supported Basurto's *et al.*, 2013 position on how (SES) challenges our ability to establish causal mechanisms linking conditions and governance outcomes, which has received considerably less attention. Also, the interlocking groundbreaking institutional (legal-economic) property-rights structure theory (see Slaev, 2014) under new institutional economics (NIE) perspective (see Chen and Webster, 2012), commons/ commons pool resources (CPR) theory, opportunism, social (commons) dilemmas, externalities theory, and common property-based collective action theory that can be adaptively fit into such SES system are yet scantily carried out.

Thus, these interdisciplinary theories, despite their high suitability and relevancy in determining resources governance destiny (social-ecological interaction behaviour; hence, condition and quality of resources) (see Webster and Lai, 2003: such approach “*offers a more dynamic analysis of urban markets and of the scope*

and requirement for intervention”), are, alas, seldom applied in the new commons, especially, residential neighbourhood POS context. That is, such institutional dimension (eclectic property-rights structure) that generally influences social-environmental interaction system, is, however, mostly under-researched notably in contemporary (urban) environment: POS governance⁴ (Andersson *et al.*, 2014; Mincey *et al.*, 2013; Boydell and Searle 2014; Brown, 2015; Ling *et al.*, 2016)⁵. This is affirmed by Colding *et al.*, (2013) that only 1.4% studies deal with the topic of institutional property system (i.e., common property regime) in such POS setting.

The knowledge gaps are evidenced as follows; e.g., since it is a CPR-based POS quality, which has been little studied in CPR/ commons lens (Foster, 2011; Colding *et al.*, 2013), then there is a demand for conceptualisation of analysis of property-rights mosaic, especially in the existence of rights diversity allocation, obligations and restrictions in such commons (Boydell and Searle, 2014; Yandle, 2007). Legal rules and institution should be improved in order to internalise the external cost or negative externalities, and policy-maker should also focus on the dynamic of the problem of disposing the externalities. There is a need for diversifying the ‘*mainstream*’ environmental planning: “*planning with property-rights*” (Webster, 2005; 2007; see also Boydell *et al.*, 2007; Lai *et al.*, 2015 on the re-assignment and creation of property rights in planning theory and a call for the mix of property-rights, economic and planning theories). This is vital by transcending the institutional premise application in addressing the public policy issues (Musole, 2009), especially on the POS poor governance and quality issues.

⁴Do not be amiss that property-rights *per se* are less done, in fact, its panoptic literature was rather historically well-established but, comparatively, the discussion done is still in paucity in new commons study, especially in developing countries like Sabah, Malaysia (see Meinen-Dick, 2014).

⁵ See Foster and Laione (2016) that urban commons still remains under-theorised, or incompletely theorised, despite its appeal to scholars from multiple disciplines (especially from the property-rights lens). Although the literature on natural resource (old) “commons” and “common pool resources” is copious, it remains a challenge to transpose its insights into the urban (neighbourhood-residential) resources context in a way that captures the complexity of the “urban”—the way that density of an urban area, the proximity of its inhabitants, and the diversity of users interact with a host of tangible and intangible resources in cities areas (see also Borch and Kornberger, 2015 for such commons gap).

Especially on the environmental urban commons (POS) dilemmas (see Khachatryan *et al.*, 2013⁶), they are also an under-researched topic. There is lacking theoretical consensus regarding how individuals behave when facing multiple simultaneous social dilemmas (McCarter *et al.*, 2014; see Van Lange *et al.*, 2013). This is proven as to date, tragedy of urban commons is unresolved; hence, it requires more attention, especially on the root causes rather than the tragedy implication. This is where the property rights structure may be the prominent factor in answering the gap (see Gerber *et al.*, 2009). Since the POS issues are currently flourishing, there is no mechanism to successfully govern it, especially applying the common-property regime approach in POS governance. Albeit it yielded many successful outcomes in the traditional commons, yet, remarkably few researches⁷ were done in POS governance (see Poklembovai *et al.*, 2012; Foster and Laione, 2016; Colding *et al.*, 2013; Ho and Gao, 2013; see also Foster, 2011; Wilson *et al.*, 2013; Schauppenlehner-Kloyber and Penker, 2016 on scantily-researched Ostrom's eight core design principles of self-organising collective action application in the new (neighbourhood-residential) commons, POS). Also, despite the importance of the state's role in common-property design principles, particularly for the newly emerged collective action system, the role of the state in addressing the commons dilemmas, especially on the interactions between the formal state and local were likely to be excluded (Sarker *et al.*, 2015).

Therefore, the foregoing gap pertaining to state-local users co-management/ governance system within Ostrom's law (Ostrom, 1990), in which, espousing the eight principle-to-principle discourse methodology of Schauppenlehner-Kloyber and Penker (2016) and Ling *et al.*, (2014c), the questions of applicability of (*how*) the eight design principles to the governance of local Sabah neighbourhood POS, particularly when the state authorities play explicit roles (intervenes) in such regime, are investigated in this thesis. After all, the most novel part of the thesis is, aside from contributing to each theory/ concept gap separately, the combination of those theories and concepts (framework) in addressing the human-POS interaction issues, ranging from its process, flow to the components interconnection. All of these

⁶ These frameworks have tended to overlook at least one of the three key dimensions: social, biospheric and temporal, that underlie the environmental dilemmas.

¹⁰ This research has not insofar been implemented anywhere in Malaysia (see Ling *et al.*, 2014c).

become a strong motivation for the researcher to attempt this research, especially they reflect several significances and novelty of this study, e.g., besides from the knowledge void filling up, insight also gained that POS quality issues should be given the attention they deserve, and it would be useful for empirical stakeholders (policy makers) seeking to serve the residents and private suppliers via institutional change in reshaping POS governance.

1.4 Research questions (RQ)

Broadly, four main sequential interrelated categories of research questions are discernible and shown as follows, without making any distinction to the nature of each question:

- (i) Is there any significant relationship between Sabah's current diverse institution (parameters) and POS quality?
- (ii) What are the local property-rights structure issues and POS common dilemmas? Why and how are they resulted by the Sabah's current practice?
- (iii) What and how is the optimal/ adaptive conceptual alternative can be adopted to improve the property-rights structure issues and POS common dilemmas?
- (iv) What is the design and structure of the model to be developed? How to validate the model or what is the methodology to perform such attempts?

1.5 Research hypotheses (RH)

Since this study employed a combination of mixed-method methodological design; hence, both RQs and RH are required in this study. However, there is only one primary testable (quantitative) hypothesis, especially directed to RQ1 above:

RH1 H₁: There is a relationship between Sabah's diverse institution and POS quality.

H_0 : There is no relationship between Sabah's diverse institution and POS quality.

1.6 Research aim and research objectives (RO)

The overarching aim of this research is to provide a dynamic institutional-social-ecological-approach-based residential neighbourhood POS model so that an efficient, equitable and sustainable social-ecological system can be accomplished. Thus, to attain the general research aim, four following sequentially interlinked specific research objectives must beforehand be formulated, respectively.

- RO1: To study the association between the current practice-based property rights structure and residential public open space quality.
- RO2: To examine the POS common dilemmas that emerged from the current diverse practice-based property rights structure failures.
- RO3: To develop a conceptual integrative common-property-based Ostrom's self-governing collective action to improve the current property institution and POS governance.
- RO4: To formulate and validate an SES-based model to describe the Sabah's institutional POS governance status quo including the interrelationship between property-rights structure issues, POS dilemmas, and conceptual self-governing system emergence.

1.7 Research scope and delimitation

Whereas the research commons perspective is wide and varied with a multi-disciplinary approach, it is not possible to embrace all the areas of this field of research in such a thesis. Hence, the researcher has nailed down or delimited his focus within this thesis. Firstly, in terms of the location (study areas) of the study, only two districts (Kota Kinabalu and Penampang) of Sabah, Malaysia were chosen

as case study. The reasons being that both districts' POS social costs emergence are probably due to the uniqueness of institutional factor, i.e., diverse property-rights structure arrangement that plausibly contributes to POS externalities. Besides, Kota Kinabalu (KK) is opted, especially because the land office, KK Lands and Surveys Department (LSD) is the headquarters, which their decisions that made pertaining to practice/ rights coordination system in POS governance are constitutionally enforced in entire other districts of the State. This is vital to get the firsthand and latest information from such authoritative department.

Next, particularly on POS that subsisted from Native Title (NT) land subdivision, Penampang district that neighbours Kota Kinabalu was hence chosen. Secondly on the nature and types of POS, solely encompassing Country Lease (CL), and Native Title (NT) POS⁸, only neighbourhood residential commons in rural context⁹ were selected, i.e., small-scale residential public open space (open to all/ public domain) that subsisted by landed property excluding gated/ gated and guarded property and high rise/ stratified residential property. It solely focused on the recreational POS usage, e.g., jogging and walking trail, community park, playground (0.5-1.5 acres, 300-1000 people) and playing lots/ fields, e.g., basketball court, football field, (1.5-5.0 acres, 1000-3000 people). According to the current practice, since the POS are governed and influenced by three different stakeholders either independently or cooperatively, i.e., by local government, a private developer, and local community; hence, they are all scoped within this study.

Next, as for the independent or exogenous variable, *inter alia*¹⁰, only the institutional property-rights structure is focused, especially in relation to POS governance: management and withdrawal pattern. This is owing to two main reasons; (i) it plausibly plays significant roles or is being able to shape the above environmental goods' wellbeing/ quality, and (ii) according to several evidences (see research background and problem statement sections), such institutional factor is

⁸ TL POS is excluded from this study, as mostly, it does not fall within the residential context.

⁹ According to Sabah Land Ordinance Cap 68, once the land is considered Country land then it is considered outside the town area (rural area). The residential use mostly falls under Country Land.

¹⁰ Other factors like architectural design, attitude and demographic, conventional planning policy, spatial factors (shape, proximity, location, size), etc. (see Colding *et al.*, 2013; Kellet and Rofo, 2009; CABA space, 2010; Legislative Council Panel on Development, 2010).

presently under-researched; thus, is identified as lacuna within new commons study. Then, as for the endogenous variable, which is the POS quality, particularly for addressing the research question one, only several measurable (*main*) qualities of quality that measured by the researcher's adapted POS audit tool are emphasised: conditions- functionality, aesthetic, cleanliness, safety and security with respect to facilities, amenities, surrounding and landscape features of POS (see more in Chapters 5 and 6). However, throughout the entire thesis, it actually transcends those main horizons, e.g., comfort and incivilities are indirectly considered, too.

1.8 Significance of the study

Through this study, it contributes a useful and essential information and ideas to the body of knowledge (academic and practical values) (see also Chapter 6). That is, it primarily bridges and advances the knowledge gap (in all theoretical, methodological, empirical and conceptual fashions), particularly in the field of New Institutional Economics (NIE), social dilemmas, contemporary commons (common pool resource, CPR) and self-governing collective action theories.

Such application of institutional-based property rights structure in determining transaction costs-based social-ecological interaction in local State, can in turn, explain the current practice-based property system public open space governance (consumption and management) interrelationship and issues, as well as adaptive integrative conceptual solution: common-property-based self-governing collective action for ensuring more quality, livable and sustainable POS.

This study deals with environmental good, POS quality, which is contributing to livability, quality of life and sustainable development (see Chiesura, 2004) of one neighbourhood or in bigger context entire society. Hence, this study must be regarded crucial, especially there are still manifold POS issues remained perennial. As if this ecological respect were left collapsed, the entire ecosystem and other aspects of sustainability (economics and social) and politics will consequently be compromised too.

On top of that, via this study, since a conceptual problem-solution based model is produced, it is hoped to illuminate or provide an opportunity and insight to the stakeholders (practitioners), as well as academicians by enhancing their understanding towards the importance, process and interplay between current Sabah's institutional POS governance status quo including the present property-rights structure issues, POS dilemmas, and prospective integrated conceptual POS solution, particularly on why and how institutional-triggered POS governance issues emerged and subsequently, how these emerging POS issues can be abated via the dynamic institutional re-alignment.

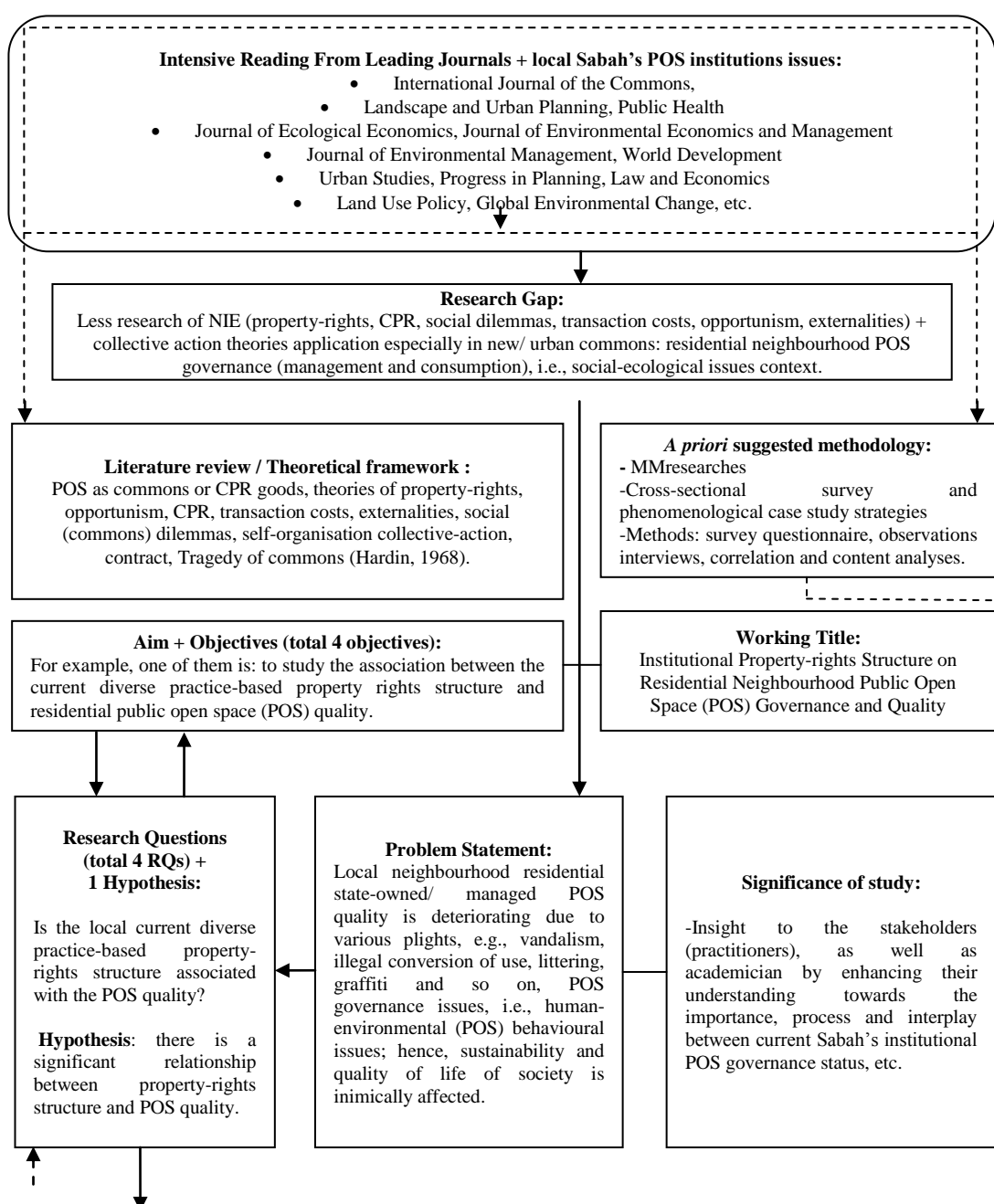
In other words, this study is significant to local government policy makers (land officers, local government, planners and landscapers), who also require collaboration from other stakeholders: private developers and public users, so that they can realise of the importance and severity of this empirical institutional-triggered POS issues (e.g., what are the pragmatic or real institutional causes to the POS issues). Additionally, if the current local POS issues and potential countermeasure are unknown; hence, the issues will continue arising, remained unresolved and aggravated, which subsequently, the poor state of POS or worse still, the irreversibly damaged POS will ensue.

Eventually, this hostilely affects the livability and sustainability of entire local State's ecosystem. Also, if this study is not contracted in domestic case (Sabah, Malaysia), particularly, there are plenty of institutions (constitutions, acts, policies) with respective prescriptions, proscriptions, goals and visions on engendering livable and sustainable environment, e.g., National Landscape Policy, National Urbanisation Policy and the current Eleventh Malaysian Plan (2015-2020)¹¹, may not be attainable.

¹¹ For a greater commitment to the environment by sustaining the green growth through the relevant policy and institutional framework, an enhancement of regulatory and institutional framework are necessitated. Three areas are prominently underlined in this national plan; (i) green goods conservation/ protection via provision (management) and consumption efficiency as well as (ii) fortification of livelihood for local communities in governing the green resources; and (iii) awareness enhancement that it is about the shared responsibility and interests to protect the green resources, etc. (see 11th Malaysian Plan).

1.9 Research framework

After identifying the key components of research, especially about the interconnection among the above research components and overall research stages, including the subsequent elements covered in this research, the researcher demonstrates the overview of research process flow (see Crotty, 1998) that acts as a research framework, particularly a process in commencing and completing the research, in diagrammatic form (Figure 1.1 below). This is used as a clear guideline; thus, validity or credibility of research may be more warranted.



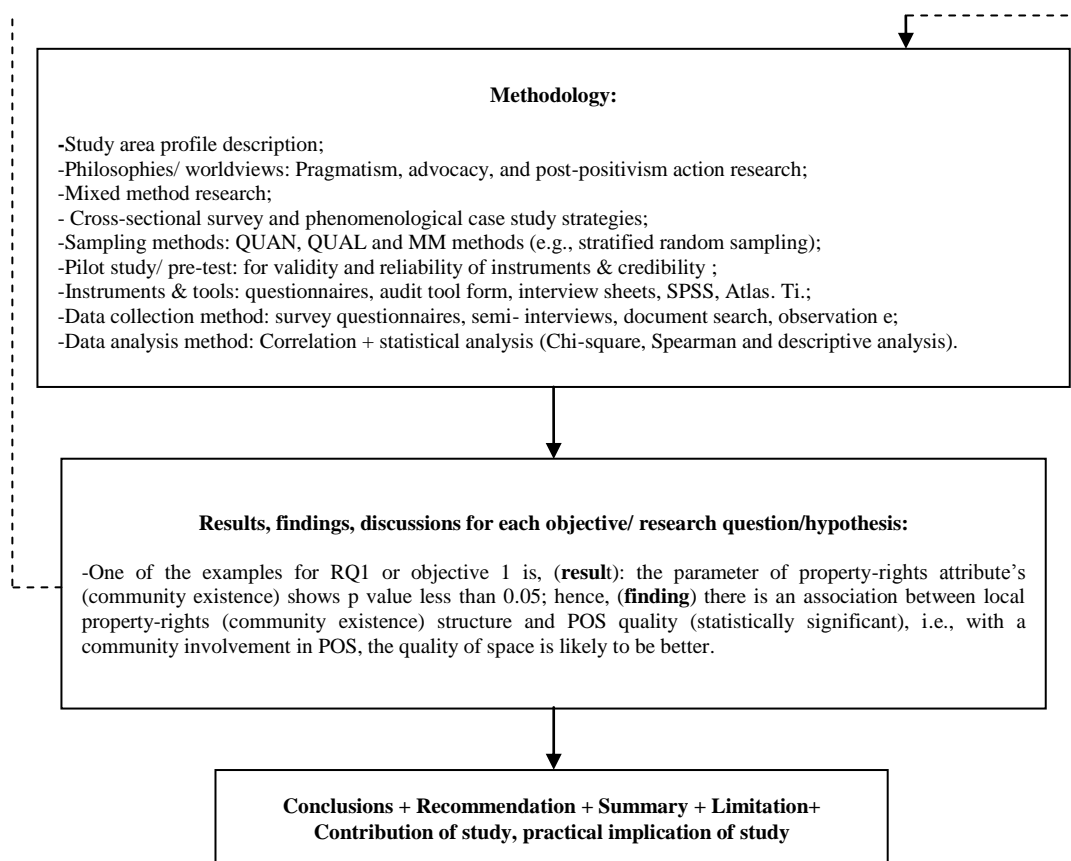


Figure 1.1 : Research framework (Adapted from Talib, 2012)

1.10 Thesis outline

Chapter 1 introduces catalysts that spur the study. Next, Chapter 2 and 3, they are about literature reviews. Generally, they review extensively the literature that relevant to the study and form the basis for the study. These involve theoretical framework and conceptual framework formation, which include the basic terminologies definitions, features and roles of parameters or variables, i.e., POS quality features and its measurement as well as its usage and significance, NIE theory, the property-rights issues/ tragedy, institution, typology of goods, commons (CPR), transaction cost, social (commons) dilemmas: prisoner's dilemma as game theory, externalities, tragedy of the commons, opportunism and self-interestedness, ex-ante and ex-post opportunism governance, and contract theory.

Besides, some background of self-governing common-property-based collective action (e.g., failures and success), few instances of design principles and its selection towards Ostrom's (1990) eight design principles, Nelson's (2002) model of homeowner association as well as countries with the best practices with self-governing system in POS governing are included too. Therefore, these two chapters develop a systemic research concept framework towards reliable research outcome that justifies the need for this study and give a clear focus and direction headed for the methodology to be applied in later Chapter 4 of the study.

In Chapter 4, aside from illustrating the case study's study area discussion, which is in Sabah, Malaysia, particularly, on two districts of Sabah (Kota Kinabalu and Penampang), this chapter is about the geographical unit of analysis. Its purpose is to understand the context background that include its history pertaining to governmental administration and jurisdiction, political aspect, characteristics in terms of demographic- religion, races, languages, etc. and institutions (laws and policies) related to land, housing and planning matters, especially on POS governance, subdivision of land, maintenance and provision of POS matters. Ultimately, this chapter also provides an overall view of the formal and de facto property-rights structure of local in POS governance. After that, this chapter also details out the methodology to be adopted and established procedural step that achieves the study goal. That is, it is separated into two main sections: (i) theoretical explanation and (ii) based on the *a priori* discussion, an empirical research in action.

It defines and elucidates their research philosophies, assumptions, types of research (e.g., quantitative or qualitative and mixed method research, its validity/credibility and reliability issues and respective research's strength and weakness), types of reasonings (e.g., deductive), strategies of inquiries (e.g., phenomenological case study), methods: variables/ data involvement and measurements, sample sampling (types and size), unit of analysis, data collection (e.g., survey questionnaires and semi-structured interviews) and analysis procedures (e.g., statistical analysis: Chi-square and content analysis-coding process) that also include research instruments development, and application of research tools.

Next, Chapter 5 reports each RQ's results, findings and rigorous discussion. Based on either quantitative (numerical) or qualitative (words) results, interpretation will be executed on them so that findings can be obtained. However, since there are an enormous amount of data analysed which also produced many results, only the primary, important and unique results will be opted for interpretations, i.e., those findings can directly hit the objectives or the research questions could only be answered by these findings. Additional and similar results that may lead to redundant findings are; thus, unnecessary. Next, the researcher discusses or infers the findings based on the literature reviews (Chapter 2 and 3). This also shows their implication to the literature, as a theoretical triangulation, for validity (credibility) and reliability purpose, which ultimately arrives at the overall conclusion in Chapter 6 later. Lastly, Chapter 6 concludes the thesis by restating the findings with concise inferences (i.e., for each objective: has this objective successfully been attained in and through this study?). This chapter also describes the types of contributions and some practical (policy) implications as well as the limitations and strengths of the study. Several potential future research recommendations in property-rights and commons studies are unveiled too.

1.11 Summary

To sum, this chapter embraces the essence of a proposal (with fixed research problems, goals: aim and objectives, motivations/ significance and gaps, direction-preliminary methodology), which sets a clear direction and foothold for the remaining chapters. This study holds some promises to the protection of POS quality and its governance research. The social-ecological interaction phenomenon at hand would be better understood through SES-based NIE reasoning and the multilevel and interdisciplinary study (Brandt *et al.*, 2013). Appreciating its complexity is the right step forward. In the next Chapter 2, it is about the epistemological expansion of theories and concepts involvement in this study, which are introduced as frameworks to examine the association between the institutional design and POS governance and quality, as well as their respective tragedies and issues, and self-governance collective-action emergence and other related concepts as a countermeasure.

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